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ART. I.—CASE OF CONFLUENT SMALL-POX, ATTENDED WITH OPISTHOTONOS.

BY JOHN S. ROHRER, M. D., OF PHILADELPHIA.

June 13th, 1840. Was called to see a child aged twenty months, son of Mr. L—, a respectable mechanic in the city of Philadelphia, labouring under an attack of convulsions. The child had been unwell a few days before, but no medical aid was called for. The convulsions had commenced half an hour previous to my arrival. I immediately had recourse to the warm bath, which soon allayed the spasms. Supposing the convulsions to have originated from irritation of the bowels, I ordered a warm poultice of bread and milk over the stomach and bowels, and prescribed a few grains of hydrarg. submur. joined with pulv. ipecac. and cret. ppt. to be followed in a few hours after with castor oil. Plenty of mucilage of gum Arabic was also ordered. In the course of a few hours the medicine operated, and the child was much relieved.

3 o'clock, P. M. Found the pulse rising, with some degree of tension, eyes turned up, with an increase of heat on the surface. Ordered bleeding at the arm, which was not attended to on account of a supposed change for the better.

14th, A. M. Was called in a great hurry, found the child in convulsions. I immediately bled it at the arm to the extent of four or five ounces, and put the patient into the warm bath; the convulsions soon ceased, and the child was again relieved. This proved, however, but temporary relief, for in the course of an hour the pulse rose to one hundred, with considerable hardness. The pupils of the eyes were contracted, and a great determination of blood to the head seemed to be the result of the last convulsion; insensibility and stertorous breathing soon followed. P. M. same day, ordered leeches to the temples and ice water to the head. Gum water continued.

15th, 8 o'clock, A. M. No convulsions, but delirium and symptoms of encephalic inflammation; pulse quick, with slight tension; difficulty of drawing blood from the arm; had leeches applied to the temples, behind the ears, and neck; about three ounces of blood taken; cold application to the head continued. Tongue furred and red round the edges.

15th, P. M. Fever somewhat abated; bowels freely open; spt. Mindereri administered at repeated intervals. Gum water continued, of which the patient drank freely.

8 o'clock, P. M. Heat and arterial excitement increased; ordered more blood to be drawn by leeches; objected to by the family.

16th, A. M., 8 o'clock. Fortunately for my little patient, one of the leech-bites was discovered bleeding this morning, which must have bled all night,

as nearly four ounces of blood were found between the folds of the bed-clothes. Patient much better, looks around lively, and calls for food; bowels, however, too open; ordered small doses of cret. ppt. and cinnamon water at repeated intervals. Cold applications to the head discontinued.

16th, P. M. An eruption now begins to show itself all over the body resembling *measles*.

17th, A. M. The eruption assuming the form of *vesicles*; fever much abated; pulse soft, but rather frequent; head relieved; tongue clean.

18th, A. M. Pustules forming; head and face somewhat swollen.

19th, A. M. Swelling of the face and head increasing, and fever considerable; patient sensible; no preternatural determination of blood to the head.

19th, P. M. Confluent variety of small-pox; eruption very great, extending all over the body; restlessness very great; much anxiety evinced, and throwing about of the limbs.

20th, A. M. One extensive mass of *eruption*; eyes closed from swelling; symptoms of *opisthotonos*.

20th, P. M. *Opisthotonos* more marked; patient swallows fluids; great restlessness; throws its arms and legs about incessantly; starts occasionally.

21st, A. M. Head drawn back between the shoulders, the muscles of the neck and back extremely rigid; bowels opened with castor oil.

22d, A. M. Spasms of the muscles of the neck, back, and of the lower extremities. One leg drawn back in the direction of the spine, and raised from the other. Patient lies on his side altogether. Head and hips thrown backwards, forming a curvature of the back, and describing an arch. Abdomen tympanitic, and abdominal muscles extended.

23d, A. M. The pulse frequent, and almost imperceptible; eruption extensive; head and feet drawn back; spasms of the muscles of the back and neck. The child rests now almost on the back part of the head and on the left side of the pelvis; face and chin thrown backwards from the breast; jaws rigid, but the patient still capable of swallowing fluids; plenty of slippery elm tea administered; grinding of the teeth; thirst great; extreme restlessness. It is with difficulty that the patient can be kept from seizing hold of his legs and bed-clothes. This grasping of the legs appears to be the effect of involuntary action. Tongue swelled and full of pustules.

24th, A. M. Hot fomentation to the spine, and mucilaginous drinks continued. Great action of the carotid arteries; bowels irritable; frequent discharges of mucus, dark in colour.

P. S. Spasms of the muscles of the back and neck; swelling of the face decreasing.

8 o'clock, P. M. Muscles of the neck and back rigid, but no spasms; snores; eyes still closed.

25th, A. M. All the symptoms better, one eyelid elevated so that part of the eye can be perceived; less determination of blood to the head; pulse less frequent; no spasms of the muscles of the neck and back, but some rigidity; the head thrown more forward in the natural position; still grinding of the teeth; mucilaginous drinks continued; bowels open, and a watery green fluid with mucus discharged.

25th, P. M. Return of spasms of the muscles of the neck and back, producing great agitation of the whole body. Head thrown back, hips elevated and inclining backwards, producing a curvature of the spine backwards as before. Heavy breathing and apparent insensibility; frequent watery discharges; prescribed the following:

℞. Hydrarg. submur. gr. iij.
Pulv. ipecac. gr. ij.
Cret. ppt. gr. vj.
Pulv. Doveri, gr. vj.
M. ft. pulv. No. iij.
One every three hours.

26th, A. M. Patient better; hopes of recovery entertained by the family; rigidity of the muscles of the neck and back softened and relaxed; eyes open; patient takes notice of surrounding objects; extremities rather cold, pulse extremely weak; no spasms during the night; diarrhoea stopped; ordered beef tea and mucilaginous drinks, principally elm tea; warm emollient poultice applied to the stomach, and warm cloths to the hands and feet.

26th, P. M. Patient more feeble; pulse small; eyes turned up when asleep.

27th, A. M. Return of spasms; head and trunk thrown back; throat contracted, and a difficulty of breathing and swallowing fluids; a choking sensation observed; tongue swelled; bowels discharging a watery fluid; a dozen of evacuations during the night; prescribed the following:

℞. Cret. ppt. gr. xv.
Pulv. Doveri, gr. viij.
Hydrarg. submur. gr. j.
Sacch. albi, gr. x.

M. ft. pulv. iv. One every three hours.

Injection of flaxseed tea with twenty drops of laudanum.

27th, P. M. Spasms ceased in half an hour after I left my patient this morning; bowels not been opened since 10 o'clock, A. M.; pulse feeble, feet cold, eyes turned up; stertorous breathing; some of the scabs falling off.

28th, A. M. At three o'clock this morning death closed this most painful and distressing scene. No spasms during the night.

For the American Medical Intelligencer.

ART. II.—ON THE USE OF THE CHLORIDE OF SILVER.

BY J. C. PERRY, M. D.

One of the Resident Physicians of the Philadelphia Hospital.

Philadelphia Hospital, January 27th, 1841.

Dear Sir,—I would call your attention to a preparation of silver (the chloride) hitherto almost entirely unnoticed by physicians, but which I have used for the past eighteen months with such results as lead me to believe it possessed of properties deserving of further investigation.

It must be universally acknowledged, that the nitrate of silver administered by the mouth can never act as nitrate of silver on the system, since any dose which could be ventured upon must, immediately on entering the stomach, be converted into the chloride of silver, from the chloride of sodium of our food, or the hydrochloric acid of the gastric juice.

The chloride must then, *a priori*, be considered as efficacious equally with the nitrate, while it will be found less uncertain in its effects, more convenient for exhibition, less liable to decomposition, and free from its nauseous taste. It may be given, too, in any dose thought necessary to produce the alterative and tonic action of silver without danger.

In less doses than thirty grains no irritating or manifest effects result. Thirty grains given at once will generally produce emesis. The best form of exhibition is in pill. To children it can be given as a powder suspended in syrup.

Twelve grains administered daily for three months have produced no unpleasant symptoms, and none of my numerous and long-continued courses of the remedy have been followed by discoloration of the skin.

In epilepsy, three grains, given four or five times daily, produced effects similar to those of nitrate of silver, but more marked.

In chronic dysentery, half a grain to three grains thrice daily produces immediate diminution in the number of stools, and tormina, with amelioration in the character of the stools and other symptoms.

I have not ventured to use it freely in acute dysentery, but in the few cases in which it has been administered, its effects seemed equally beneficial.

In chronic and colliquative diarrhœa, benefit was derived from its use in the same doses, but not so markedly, uniformly, or permanently.

The catamenia suspended for years have, without any adjuvant treatment, returned after its free exhibition for two or three weeks.

One case of secondary syphilis (the only one in which it has been tried,) improved rapidly under it.

Such are the results of my experience, and if you think them deserving of your attention, I will prepare the notes of the cases for your inspection.

I am, very respectfully, yours,

J. C. PERRY.

Professor R. Dunglison.

For the American Medical Intelligencer.

ART. III.—NOTES ON THE DISSECTION OF AN ALLIGATOR.

BY C. G. FORSHEY, ESQ., OF NATCHEZ, MISSISSIPPI.

Dear Sir,—Agreeably to my promise, I copy for your use a few notes I made in the partial dissection of an alligator, on the 20th April last, with the aid of my respected friend, Dr. Samuel A. Cartwright. I was led to the examination from the circumstance of having noticed a transversion of the heart and lungs, spleen and liver of a very large alligator we had taken, and laid open for the purpose of getting the temperature of his blood at the fountain. The notes, as you will perceive, relate to only a few points, it being inconvenient at the time to complete the dissection.

Glossus muscles and tongue attached beneath the larynx. Larynx three to four diameters of the trachea. Cartilage covering the larynx beneath *single*, and shaped much like the back of a turtle. The capacity of this larynx will sufficiently explain their bellowing, which I have heard nearly two miles. Os hyoides attached on each side at an angle of 45° with line of trachea, depart on each side a semi-diameter of larynx, and having then an elbow or lateral articulation; direction thence parallel with trachea. The sternum a hard cartilage, with a lateral articulation in the centre, which explains their movement in seizing their prey.¹ Relative position of the trachea and œsophagus as in the human body. Very powerful pectoral and brachial muscles. Scapula with a rib attached almost at sternum. Tendon extending from centre of scapula to the clavicle, which is united to the scapula as a single bone, without a joint or articulation. A powerful muscle is attached to the upper part of bones of pelvis, and extending to the viscera, to aid in expanding for the large supplies of air required in swimming rapidly. Heart in centre under trachea. Single ventricle and auricle. Bifurcation of trachea one third of distance between fore and hind feet.

¹ The habit here alluded to is their sudden lateral motion of the head, neck, and shoulders to meet the prey, which is at the same moment struck with almost irresistible force by the tail. The victim, whether a calf, hog, dog, or deer, is thus disabled by the stunning blow, which drives him into the "dead-fall" mouth of his captor. This power of course is only available on land, and immediately the alligator plunges into the water to strangle the prey, which might otherwise revive from the blow and prove troublesome.

You will permit me, my dear sir, to add another note, which I find in my memoranda made about the same date. It may possess some interest to you, or it may have long since come under your notice, or, finally, it may be of no importance in any respect. Still every truth in science, I hold, possesses sufficient dignity in itself not to appear ridiculous, whether it have any apparent practical utility or not. So much by way of preamble to a note which is itself not longer.

May 24, 1840. Took a syphon tube one fourth inch calibre, immersed the elbow in cold water, and passed a current of my breath through it, at a dew point of about 94, until I condensed some six inches of water in the tube; then, with a very elegant and delicate pair of scales, weighed the contents. I then weighed precisely the same length of column of rain-water from the cistern, at the same temperature; and deduced the specific gravity of the water condensed from the breath, and found it 0.967125.

The experiment was not repeated, but was made in this instance with so much care and precision as to give me no little confidence in the result. Richard H. Lawrence, Esq., aided me in it.

I have the honour to be, with the highest consideration,
Your obedient servant,

C. G. FORSHEY.

Prof. R. Dunglison, M. D., Secretary to the Amer. Phil. Soc.

ART. IV.—MORBUS BRIGHTII.¹

Dr. Bright, it appears, took distinct cognisance of the chronic and advanced anatomical conditions of the disease alone; and it follows likewise, from distinct avowal in his pages, that he was dubious as to the precise nature of the connection of the lesions he described. It is true, this observer has figured a distinct example of hyperæmic enlargement of the kidney, attended during life with anasarca and a coagulable state of the urine; but so little comparative importance did he attach to this morbid change, that in the general description of the disease, in his original essay, it is not made the subject of reference, while in his second production, though the complaint is spoken of as commencing with acute symptoms, no cases are related from which the writer's opinion respecting the anatomical state of the organs, where such symptoms exist, may be gathered with precision. The attempt exhibited in the next column to trace a regular catenation of morbid changes from the mere derangement of local circulation to the most advanced disorganisation must, if well founded, confer high distinction on M. Rayer. Now, that the first stage of disease exists, as described by this pathologist, seems established—the statements of others corroborate his account. And it is equally certain that we have here the anatomical evidences of intense congestion, if not of actual inflammation. The enlargement of the organ is the simple result of the stagnation of blood, and it would be not more erroneous to call an erect penis hypertrophous than, with M. Solon, thus to designate the congested kidney.² M. Solon, it is true, talks about the blood being already combined with the renal tissue in this stage of the disease, but the alledged fact that the fluid cannot be removed by washing is no

¹ Brit. and For. Med. Rev., Oct. 1840, p. 304.

² This is a singular notion on the part of a writer of M. Solon's experience. Dr. Christison, however, has no excuse for joining, in his allusion to it, in a habit reprehensibly common both among ourselves, and among foreigners in their references to English literature, namely, in ascribing to a people at large the opinions of individuals; he fathers the present mistake upon the entire community of "French pathological writers."

proof of this,—more especially as it may be easily expressed. The characteristic feature of the next phasis, the mottled appearance produced by reddish maculæ on a yellowish ground, seen both on the external surface and in the interior of the kidney, is attributed by M. Rayer to the partial disappearance of the previous state of hyperæmia, and its replacement by anæmia. M. Solon conceives, on the contrary, that the yellow tint results from more complete combination of the principles of the blood with the renal tissue, and not from a bloodless condition of the part; an opinion against which the objection already made, and obviously applicable during the first stage, now ceases to bear. In the third, the hyperæmia disappears more completely, the mottled aspect is lost, and a uniform slightly yellowish tint prevails; anæmia is now, according to M. Rayer, general. But, as M. Solon well observes, the term anæmia, which may be very correctly employed in speaking of the state of the kidneys in subjects dying of hemorrhage, is not applicable, in point of accurate description, to the discoloration now referred to. And M. Rayer himself elsewhere lends force to this observation; for he points out (p. 324) its yellow tint as actually distinguishing this condition of the renal tissue from the anæmic kidneys of certain tuberculous subjects. In the fourth phasis the previous state of discoloration still prevails, but the deposition of "Bright's granulations" marks it distinctly; the fifth seems to be a mere modification of this stage. In the sixth, the granulations commonly disappear, and differing in this from all its predecessors, this stage is frequently marked by a tendency to congestion, contraction, or atrophy on the part of the kidney. M. Solon, it will be seen, carries us a step further, and attempts to range all renal, analogous, and heterologous products as an ordinary and necessary sequence of Bright's disease,—a proceeding so utterly irreconcilable with what is known respecting those products, and with the general laws of pathology, that we can only marvel at its adoption.

The anatomical characters of the affection claims our first attention, and in order to exhibit in a distinct manner the similitudes and differences in the descriptions of the four observers who have made them a subject of special study, we shall display these in a condensed form in juxta-position.

BRIGHT. (1827.)

Chronic.

Its Form. The kidney loses its firmness, acquires a yellow or mottled appearance externally; the same yellow colour, slightly tinged with gray, pervades the cortical substance; the tubular is of lighter colour than natural; the size of the kidney not materially altered; there is no morbid deposit.

2d Form. The whole cortical part is converted into a granulated texture, with copious morbid interstitial deposit of an opaque white substance: the kidney is generally enlarged, sometimes very much so. (The granulations are rendered more apparent by maceration.)

3d Form. The kidney is quite rough and scabrous to the touch externally; and is seen to rise in numerous projections of about the size of a large pin's head, of yellow red and purplish colour. The form often inclined to be lobulated, the feel hard, the texture of semi-cartilaginous firmness: tubular portions appear drawn near to the surface of the kidney.

RAYER. (1837.)

Acute.

1st Form. Kidneys enlarged, their weight may reach 12 oz.; firm, but not hard; surface of a morbid red colour, and studded with small deep red points. Internally, the increased size is found to depend on the cortical substance, which presents a great number of similar points, apparently the Malpighian glands injected. Tubular cones of duller red colour, and their striæ less distinct than natural; pelvis and calices injected.

2d Form. The enlargement persists, with slight diminution of consistence; tendency to lobulation is often observed; mottled appearance from red spots on a yellowish white ground (mixture of hyperæmia and anæmia.) On division, the cortical substance appears swollen, and of pale yellowish tinge, speckled with red; the tubular of a rather bright brownish red.

Usually Chronic, rarely Acute.

3d Form. Size and weight increased as before; no mottling; cortical substance externally and on section appears of a pinkish white and slightly yellowish hue, or paler, and like that of eel's flesh. Small vascular arborisations; and sometimes large white granulations resulting from deposition of plastic lymph.

4th Form. Size and weight as before; external surface smooth, of pale yellow colour, speckled or covered with milky white spots as large as the head of a very small pin; these are found also in the interior of the cortical substance (which is of the same pale colour as in the two previous forms), and aggregated into flocculent streaks.

Chronic.

5th Form. Rarer than the preceding; kidneys as before in point of size and weight; lobules unnaturally distinct; the external surface appears as if a vast number of "grains de semoule" were deposited under the cellular capsule of the organ.

6th Form. The kidney is sometimes larger but often smaller than in health; is hard and presents inequalities or mamillæ on the surface, few or no milky spots (Bright's granulations), but commonly some of these in the interior of the cortical substance. Capsular membrane almost always thickened and very adherent.

MARTIN-SOLON. (1838.)

1st *Degree or variety.* Kidney red, hypertrophous, enlarged and heavy,—especially cortical substance; the tubular is also of deep red colour, but not hypertrophous; the blood combined with these tissues cannot be removed by washing; the renal substance is friable and marked with red or blackish stellate points,—probably ecchymoses.

2d. Tissue still hypertrophous, presents a yellowish striated or mottled appearance; the sulci marking the divisions of the kidney in infancy are sometimes manifest; the tubular substance is slightly hyperæmic.

3d. Kidney almost always hypertrophous, a state still depending on cortical substance; the external surface generally smooth, sometimes presents inequalities. Surface of a pale yellow hue, something like that of the pancreas, as likewise is the substance of the kidney internally; the cortical substance appears to penetrate between the radii of the tubular; and these latter have in some measure disappeared or tend to become of a pallid colour. The tissue is soft, but to a certain degree friable, though it resists laceration somewhat.

4th. The kidney presents the yellow appearance just described; and besides white pultaceous creamy particles, apparently produced by interstitial exhalation on the surface and in the substance of the organ (Bright's granulations.)

5th. Kidney, in addition to the anatomical characters of Bright's disease, contains some form of adventitious product (cysts, tubercles, carcinoma, &c.)

CHRISTISON. (1839.)

1. *Incipient stage.* A minor degree of the second stage,—namely, of the deposition of a grayish-yellow, obscurely granular matter in the cortical structure, with or possibly without some degree of sanguineous congestion.

2. *Middle stage.* The deposition of granular or cheese-like matter, the only important and well-established anatomical character of the morbid formation, seems at first to be, for the most part, chiefly confined to the cortical substance.

3. *Advanced stage.* The morbid deposition gradually pervades the tubular substance.¹

Now, it must be admitted that the gradations of disease here described seem naturally and closely connected, as far as the fourth; and though it may be difficult to demonstrate the link between the yellowish discolorations, &c. and the deposition of the granular matter, the fact is no less important, that such deposition does not probably occur until the tissue of the kidney has, with greater or less rapidity, passed through the previously described phases. Should a suspicion arise that accuracy has been sacrificed to zeal for systematic arrangement, this may be dismissed with the reflection that each of these forms of disease, with its special characters, has repeatedly been observed by writers who entertained no particular view respecting the mode of relation of the series. The sixth stage of M. Rayer acknowledges its connection with its predecessors by the occasional presence of the milky granulations. Such then may, in the present state of knowledge, be fairly admitted to be the mode of progress of this disease under ordinary circumstances, and when its evolution is regularly accomplished. But it must not be forgotten that, in many instances, we are without any direct proof from anatomy, or collateral evidence from symptoms, that the disorder has originated in active congestion: the morbid changes appear, indeed, to advance so insensibly, as almost to exclude the notion of an irritative process having existed in the affected organ.

In our arrangement of M. Rayer's *forms*, we have shown the presumed connection between the anatomical lesion and the acute or chronic course of the symptoms. The acute affection has most frequently been witnessed in children as a sequence of scarlatina, especially according to M. Rayer, in certain epidemics, but also occurs in adults independently of any exanthematous disorder. In these cases it appears with the ordinary character of a febrile disease, is attended commonly with sickness and vomiting, and characterised by certain remarkable changes in the constitution of the urine and blood, and by effusion of serosity into the cellular membrane, or more rarely, into the serous cavities. The urine is, at this period, always acid, and voided in small quantity; it is at times, according to Dr. Christison, altogether suppressed, but there is little evidence of this in his reported cases, and of the nature of one of those (No. 1), apparently justifying the statement, serious doubts, as we shall presently see, may be very fairly entertained. The colour of the fluid is reddish or deep brown, depending on the presence of more or less blood; this is in rare cases so abundant as to be voided in small clots. We have already alluded (vol. viii, p. 128,) to the dissent between observers respecting the specific gravity of the urine in this affection. M. Rayer now somewhat modifies his former statement on the point, by affirming that the density is *often* above and *rarely* below the healthy standard. The average of six cases, observed by himself and Dr. Bright, gives 1028; and if, as he remarks, intercurrent inflammation of other organs arise, the density increases still further. Dr. Christison's statements on this point are deficient in explicitness; for at page 34 he asserts that "the density now lies within the limits of health," while at page 48 we find "a moderate reduction" of specific gravity recorded among the pathognomonic characters of the incipient stage. M. Solon has on his side fallen into the serious error of omit-

¹ Dr. Christison also believes that the following appearances "ought to be distinguished with the view of afterwards tracing their relationship. 1. Congestion of the kidneys with or without some granular deposit in their substance. 2. True granular degeneration of the cortical or tubular structure; *a*, finely granular; *b*, botryoidal. 3. Degeneration by a smooth homogeneous yellowish gray mass, intermediate in consistence between that of the liver and that of the brain. 4. Disseminated tubercles. 5. Induration of semi-cartilaginous hardness. 6. Atrophy, with disappearance of the proper renal structure, and with or without one of the previous morbid states. 7. Simple anæmia."

ing to distinguish, in speaking of the density of the fluid, the periods of the disease at which the observation is made. There can be no doubt that the specific gravity is comparatively high at the outset of the complaint, a fact explained by Rayer by the simple consideration that the ratio of the solid to the aqueous constituents of the urine is at this period scarcely affected. Dr. Christison, who maintains that the proportional quantity of solids is already lessened, refers the high average density to the adventitious albumen which is present, strengthening this opinion by the allegation that "if the fluid be filtered after coagulation, the density falls by four, five, or even seven units." But here is a most fallacious argument; for the process just mentioned separates, not only the albumen, but also always a portion of urea, and frequently a large share of mucus or blood-globules, of lithic acid, and lithate of ammonia, (*vid.* vol. viii. pp. 135-6.) The old mode of clarifying coffee might have reminded Dr. Christison of this fact. We are therefore disposed to agree on this point with M. Rayer. Every one will of course grant Dr. Christison that, as the quantity of urine discharged is commonly below the normal average, the total amount of solids excreted therewith in the twenty-four hours falls below the healthy standard; but the estimate that it falls to one fourth or one sixth of the ordinary mean is not to be confided in, as the error just referred to must have influenced this calculation also.

Examined under the microscope, the urine is seen to contain blood-globules in numbers, occasionally mucus-globules, and always lamellæ of epithelium; at this stage crystals of uric acid are rarely observed. The sanguinolent appearance may obtain for two or three days, or more, and sometimes recurs after disappearance; the degree of bloody impregnation varies from time to time, as that of the albuminous, and the abundance of the latter is not at all in the direct ratio of the former. The quantity of albumen discharged varies not only in different patients, but in the same subject from day to day, nay, even from hour to hour. Dr. Christison affirms that it is always abundant during this stage, but may suddenly disappear temporarily; Rayer has "often" found the pale urine of the chronic malady "much more highly albuminous" than the deep red fluid voided in the acute stage.

The renal regions are commonly the seat of dull, rarely of acute pain. Dr. Christison speaks of frequent desire to pass urine, accompanied with difficulty or pain in the act, as existing at this period: M. Rayer affirms that these phenomena are never present except there be coexisting disease of the bladder, or fibrinous concretions of large size present themselves at the orifice of the urethra. The retraction of the testicle and pain in the direction of the ureters, sometimes observed in simple nephritis, do not appear to exist in this affection. Scarcely have the morbid changes of the urine been established, when anasarca supervenes, ordinarily commencing by puffiness of the eyelids or face, in other cases originating in the limbs, and characterised by tenseness of the skin and the absence of pitting under pressure.

To the frequency of buffiness in blood drawn at this period of the disease, we have the testimony of all observers who have written on the subject. The specific gravity of the serum diminishes from the decreased proportion of its albumen, and may fall from 1030, the normal mean, to 1022, or even 1020 or 1019. Rayer states that the natural state may return a few days after venesection, provided that operation have rendered the urine less albuminous than it had previously been. The serum is sometimes lactescent from admixture with fatty matter removable with sulphuric ether. According to Dr. Christison, "the presence of a large quantity of urea" in this fluid may be ascertained during the present stage, provided the amount of urine have not been considerably increased by incidental causes beyond what constitutes the common average at this period. MM. Rayer and Guihourt sought unsuccessfully for albumen in two instances during the first stage. Negative evidence will not, in circumstances like these, more especially as

M. Rayer does not mention the quantity of urine daily discharged, counterbalance the positive assertion of Dr. Christison. But his proposition appears open to attack on other grounds. In truth, on turning to Dr. Christison's collection of cases, we find not a single one conclusive of the alleged fact. Cases i. and xx. are probably those to which the author would direct our attention; but that the former was a case of Bright's disease at all may be doubted; and as death did not occur in the latter, the precise state of the kidneys can only be matter of conjecture; but that it was far from being exactly such as the narrator of the case would infer appears from the following considerations: The subject whose history is therein given had had anasarca twice previously, twenty years and five years before he presented himself at the Edinburgh infirmary. Granted that he had in the interval been in apparent possession of good health, and that his last attack supervened with acute symptoms; where is the proof that the man had not been voiding albuminous urine for months, for years,—in a word, that the disease had not in the interim been following a latent course? Does not Dr. Christison here fall into the very error against which he himself, even more emphatically than his coadjutors, in the investigation of this disease, warns others? Does he not totally forget the existence of his own 25th, 29th, and 67th pages, where he says there are many cases where, although the disorder may appear to have begun as an acute affection, traces will be found of its having existed for several months before in a chronic form; [where is this more likely than in a case where there had been at least two distinct attacks previously?] and further relates that the kidneys of a stout, muscular, and healthy woman, who had been killed in a squabble, were found "very far advanced in granular disorganisation." Had this woman been the subject of an acute intercurrent attack before death, and fallen under the notice of Dr. Christison, her blood would have furnished an excellent example of impregnation with urea "in the incipient stage of the affection." But, again, Dr. Christison's mode of satisfying himself of the presence of urea in some cases, may have its share in inducing the discrepancy of opinion referred to. It appears that he considers effervescence, with evolution of an urinous odour by the action of nitric acid on the alcoholic extract of the solids of the serum, a satisfactory proof of the presence of urea. Now, Lecanu,¹ and Brett, and Bird,² have shown that the peculiar odour in question is evolved when a certain extractive matter of the blood, wholly distinct in nature and properties from urea, is thus treated. Besides, MM. Guibourt and Rayer have ascertained that small solid masses, simulating the nitrate of urea in sensible properties, may be obtained by the reaction of nitric acid on certain alcoholic extracts of the serum. The proportion of fibrine now varies, according to Dr. Christison, from 82 to 30 parts in 10,000,—a tolerable proof of the insignificance of its ratio as an evidence of the presence of the disease; even in health the quantity of fibrine is subject to very extensive variation. Dr. Christison believes that the ratio is, in Bright's disease, "regulated by the amount of buffiness of the blood;" but M. Rayer well reminds us that, as Denis has shown, the quantity of fibrine cannot in other diseases be calculated by that of the buff. The proportion of hematosine is stated by Dr. Christison to be undecreased in amount during this stage. His calculation really refers to the globules and not to the hematosine; he himself appears to consider them the same thing.

The disease may terminate by recovery, by death, or by passing into the chronic forms. The former termination is announced by abundant sweating, by marked increase of discharge from the kidneys, with restoration of the natural characters of that discharge, and disappearance of the dropsical effusion. When the disease proves destructive to life, the fatal issue is generally preceded by cerebral symptoms, or by thoracic inflammation. If the

¹ Brit. and For. Med. Rev., vol. vi. p. 433.

² Med. Gaz., vol. xii. pp. 494, 567, 805.

complaint subsides into the chronic state, the patient may recover the general appearance of health, and no sign of morbid character be present except albuminous impregnation, a point, practically speaking, of the greatest importance. This state may have continued for a variable period, when a new attack of dropsy occurs, the disease assuming the aspect of an acute disorder. A fact upon which M. Rayer insists is, that in individuals of a habit rendered cachectic by disease, or by default of healthy nourishment, the disease may wear a chronic character *ab initio*, from the absence of marked symptoms of reaction, and yet the kidneys display on inspection the anatomical characters, though in an ill-marked form, of the acute complaint. And it is also a well-founded remark of this observer, that with each recurrence there is a stronger tendency exhibited to the chronic character, though, as we have just had occasion to hint, this is a rule not without its exceptions.

In the chronic, as in the acute disease, the state of the urine and of the blood, and the presence of serous effusion, furnish its principal signs; there is rarely distinct pain or tenderness under pressure in the renal regions. The urine is sometimes voided more frequently than in health. Dr. Christison dwells forcibly upon the diagnostic importance of the patient's "being awakened once or oftener in the night-time by the necessity of passing urine;" an evident proof how completely Dr. Christison's mind is engrossed by this affection, for there is probably not a single irritative state of any part of the lower portion of the urinary passages especially that is not productive of similar discomfort. The same writer observes, that the quantity of urine is often very little reduced below the standard of health, frequently it rather exceeds than falls short of it, but if an acute attack supervene, or if the chronic disorganisation "has been allowed to go on to an excessive extent, without the disease being cut short, as more usually happens, by some fatal secondary affection," it may diminish to almost total suppression: in a case of the latter kind, "the quantity, for nine days before death, did not exceed an ounce." This fluid is now commonly slightly acid, occasionally neutral or alkaline. M. Solon remarks that alkalescence cannot depend on the presence of ammoniacal carbonate, on account of the freedom from fetid odour, or from effervescence under nitric acid, and ascribes it to the sodic salts of the serum, which find their way into the urine along with its albumen. Were this, however, a perfectly correct explanation, we should expect to find alkalescence in the direct ratio of albuminous impregnation, which is far from being the fact. The density of the urine is now invariably low, and may fall to 1004, an effect produced by diminution of its solid constituents. It is not known in what proportion this diminution affects the urea and salts respectively: M. Solon has pointed out the deficiency of calca-reous salts. The fluid is pale, with scarcely any urinous odour; occasionally turbid, contains lamellæ of epithelium, and, as its chief characteristic, a variable quantity of albumen. Its sediment sometimes contains mucus-globules or blood-globules, and small crystals of lithic acid; in very rare cases some pulverulent lithates are discoverable; the phosphates also are present in very feeble proportion. The slight muddiness or turbidity occasionally observed is, according to Dr. Christison, "probably owing to modified vesical mucus," but it may also depend on the suspension of fatty matter removable with sulphuric ether, as shown by Rayer. Respecting the relative amount of albuminous impregnation in the two stages of the disease, authors vary. Dr. Osburne relates that the extent of disease discovered after death has been, according to his experience, invariably in proportion to the degree of coagulability. Rayer has found the "quantity of coagulum often greater in the acute than in the chronic disease," the whole sample of urine acted upon sometimes forming into a mass; in others, slight opalescence only being produced. It appears clearly from his chapter on the "progress of the disease," that M. Solon holds an increasing proportion of albumen to be indicative of advancing disorganisation. Dr. Christison's "observation leads to the inference that the albumen abounds most in the

early stage, decreases towards the advanced stage, and when abundant in the latter period, is so *incidentally from the supervention of fresh reaction.*" We confess ourselves unable to account for the difference of opinion here exhibited, unless the proposition printed in italics afford the clue thereto.

Meanwhile, what is the state of the blood? As may be anticipated from what has just been said respecting the urine, contradictory notions are held on this point. If we credit Dr. Christison, "the density and solid contents of the serum, previously much reduced, gradually return to the healthy standard, or even exceed it;" in the middle stage, the density is said to be about 1024; in the advanced, it may be so high as 1031. The proportion of the solid constituents of the serum is, on the contrary, according to Rayer, remarkably lowered to such a degree, that he has found the specific gravity fallen to 1029, 1019, and even 1013. It will be observed, that in both instances the density of the serum is inversely as the different proportional quantity of albumen presumed by each of these writers to be passed with the urine; each of these has at least the merit of consistency. On this subject M. Rayer remarks, "*if by beginning of the disease Dr. Christison understand the end of the first, or the course of the second month of the complaint, the diminution in the density of the serum is beyond a doubt sometimes very considerable; if by middle stage he designate cases in which, in consequence of amendment in the patient's state, a decreasing quantity of albumen is discharged with the urine, this statement is still correct. But the diminution of albumen in the urine and augmented density of the serum, stated by Dr. Christison to be the ordinary characteristics of the final stage, appear to me to be of completely exceptional occurrence.*" (Vol. ii. p. 122.) Your *if* would then fain be a peacemaker among pathological wranglers; but in this instance, at least, its pacific efforts fail, as Dr. Christison does not distinctly state any thing of the kind alluded to. Nevertheless, there may be some share of justness in M. Rayer's supposition, for, judging from Dr. Christison's published cases, it may be questioned whether this practitioner has had an opportunity of observing a single indisputable example of Bright's disease in the truly acute stage; an idea which receives corroboration from the fact that he himself places "granular deposition" among the anatomical characters of the very earliest stage. Again, these observers differ: the Parisian writer has found the lactescent appearance of the serum now more marked, the Scottish less so, than in the outset of the disease. They agree, however, in stating the quantity of uræa to be commonly diminished and that of serum increased; and coincide in considering the proportion of globules diminished: M. Rayer has determined the latter point by microscopical examination; Dr. Christison ascertained by chemical analysis that the ratio may sink to less than a third of the healthy average. The fibrine is now, according to the latter observer, most commonly natural in amount. But here the uniformity of opinion ceases. According to Dr. Christison, the uræa "*frequently disappears from the serum of the blood as the disease advances;*" while M. Rayer affirms that this proximate principle may be *more frequently* detected in the chronic than in the acute stage. The Edinburgh Professor modifies the above opinion so materially in the very sentence in which it is announced, as to involve, at the least, a contradiction in terms: "in the most advanced stage," he says, the uræa *commonly* reappears, and it is sometimes present towards the close in larger proportion than ever." The variation depends, it is alleged, on the varying quantity of uræa excreted by the kidneys; whenever this is materially reduced, the principle in question may be distinctly found in the blood.

The characters of the anasarca which forms an almost invariable attendant on this stage of the affection are sufficiently well known. But respecting the importance of anasarca as a symptom there is some difference of opinion. The French describers of Bright's disease, struck with its extreme frequency, rank it among the regular symptoms of the affection; Dr. Christison, influenced by its occasional absence, lowers it in importance to that of a mere

secondary affection. If the arrangement of Dr. Christison be more scientific, (this, however, may be doubted, for we are not aware that the signification of the phrase "secondary affection" has ever been defined with precision,) that of the French authors is much more practically useful, inasmuch as less danger is to be apprehended from slight exaggeration of the frequency of the condition in question, than from underrating the constancy of its occurrence. Dr. Christison upbraids the continental writers on the subject with "incorrectly considering anasarca an essential character of the disease;" but the accusation is a groundless one: M. Solon (p. 267) recognises the occasional absence of anasarca as an ascertained fact; M. Rayer has figured the kidneys of individuals who had not suffered from this symptom, and M. Forget published a similar case. Whatever be the term applied to indicate the connection of anasarca and the renal lesion, the important point to remember is, that the former is scarcely a less frequent attendant on the latter than, for example, cough on phthisis.

The volumes of MM. Rayer, Solon, and Christison contain numerous reports of cases in justification of the general statements broached by their authors. We have much satisfaction in perceiving in those of the latter writer a very distinct improvement upon the ordinary style of records of the kind published in this country; and though numerous defects both of matter and manner might easily be pointed out, we shall, in compliment to the general superiority of the whole, suffer these to pass without particular notice. M. Rayer's cases are divided into two grand sections: the first exhibiting the characters of the uncomplicated disease; the second illustrating its multitudinous relations of cause and effect to certain organic and functional maladies. In his commentary on these cases, the author examines some of the most important questions connected with the general pathology of the disease. Opportunities of ascertaining the condition of the kidneys in the truly acute stage have rarely occurred, and from the statements already laid before the reader, it follows that in the present state of knowledge there can be little surety in many instances respecting the stage of the disease from the evidence of symptoms. Besides, in respect of other renal affections, the diagnosis of the early stage of Bright's disease is any thing but satisfactorily established. In proof of this, it is sufficient for the present to state, that two cases, reported by M. Solon as distinct examples of the incipient affection, are regarded by M. Rayer as cases of inflammation of the pelvis, of the kidney and bladder: that Dr. Christison's case i., put forward as exhibiting "a characteristic example of the early stage of granular disorganisation," is by the same French writers esteemed a case of *simple* nephritis, attended with typhoid symptoms; and again, the patient of the Edinburgh author's case xix., supposed by him to have been the subject of the early stage of Bright's disease, is by M. Rayer maintained to have suffered from simple hematuria. In many cases of acute dropsy, with coagulable urine, and this more especially where renal pain coexists, the kidneys are probably the seat of such congestion as would ultimately lead to the special disorganisation, but it would be no easy task at present to demonstrate this, as the following paragraph will show. In the infancy of our acquaintance with a disease, we can rarely acquire scientific certainty of diagnosis unless with the assistance of the scalpel. M. Solon adds one distinct example, with the dissection, of the incipient stage of the disease, to that published by Dr. Bright; M. Rayer three or perhaps four of the same kind.

[To be continued.]

BIBLIOGRAPHICAL NOTICES.

*Hare's Compendium of Chemistry and Electricity.*¹

These useful volumes, from the pen of one of our ablest chemists—well known in Europe as well as in this country—must greatly facilitate the progress of the student in the agreeable and important departments of chemistry and electricity. The facts and doctrines are clearly expressed, and the text is elucidated by appropriate woodcuts. The works are well adapted, not simply for the tyro in chemistry, but for every one who is desirous of being on a level with the state of the sciences investigated in their pages.

*Professor Drake's Introductory Lecture.*²

The grounds assigned by the able and veteran author and teacher for consenting to the publication of this appropriate introductory discourse are—first, that it may do something towards promoting the study of pathological anatomy in the west and south, and perhaps aid the student, after graduation, in the prosecution of clinical observations; and secondly, that its publication might contribute to make known the fact, that the professors of the Louisville Institute had erected an amphitheatre in which the examination of patients can be conducted in a manner far more advantageous to students of medicine than in the wards of the hospital.

The whole address is appropriate, and characterised by all the intellectual vigour of the author.

*Tweedie's Library of Medicine.*³

The volume before us is the third of Tweedie's Library of Medicine. The two first we have already noticed. The present is at least equal to its predecessors. We are disposed, indeed, to regard it as superior to the first volume, the articles in which are more unequal than in any of the others.

¹ A Compendium of the Course of Chemical Instruction in the Medical Department of the University of Pennsylvania. By Robert Hare, M. D., Professor of Chemistry. In two parts. Part I. comprising the Chemistry of Heat and Light, and that of Inorganic Substances, usually called Inorganic Chemistry. Fourth edition, with amendments and additions. 8vo, pp. 370. Philadelphia, 1840.

A Brief Exposition of the Science of Mechanical Electricity, or Electricity Proper, subsidiary to the Course of Chemical Instruction in the University of Pennsylvania, with engravings and descriptions of the apparatus employed. By Robert Hare, M. D., Professor of Chemistry. 8vo, pp. 80. Philadelphia, 1840.

² An Introductory Discourse to a Course of Lectures on Clinical Medicine and Pathological Anatomy, delivered at the opening of the new Clinical Amphitheatre of the Louisville Marine Hospital, Nov. 5, 1840. By Daniel Drake, M. D., Professor of those branches in the Medical Institute of Louisville. Published by the Class. 8vo, pp. 16. Louisville, 1840.

³ Dissertations on Diseases of the Organs of Respiration. By C. J. B. Williams, M. D., &c., Professor of the Practice of Medicine, University College, London; Theophilus Thomson, M. D., Physician to the Northern Dispensary, &c.; W. B. Carpenter, M. D., Lecturer on Forensic Medicine in the Bristol Medical School, &c.; W. Bruce Joy, M. D., Fellow of the King's and Queen's College of Physicians in Ireland, &c. Edited by Alexander Tweedie, M. D., F. R. S., &c. &c.; with American Notes and Additions. By W. W. Gerhard, M. D., &c. &c.

Having consequently spoken favourably of the two first volumes, we can unhesitatingly recommend this also to the attention of our readers. It is replete with interesting practical instruction.

MISCELLANEOUS NOTICES.

Pennsylvania Asylum for the Insane Poor.—It affords us heartfelt pleasure in being able to state that the bill for the establishment of an institution for the insane poor has passed the legislature by an overwhelming majority, and has received the sanction of the governor; so that it is now a law. It is a glad triumph to those whose philanthropic exertions have been instrumental in the result; and a bright spot in Governor Porter's administration.

Albany Medical College.—The number of students, as per catalogue, was 122 during the last session. The number of graduates was 29.

Vacant Chair in the Medical Department of the Transylvania University.—The chair of the theory and practice of medicine in the medical department of the Transylvania University is at present vacant, and with a view to fill it in the best possible manner, applications for the appointment are invited from the members of the medical profession.

The communications on the subject must be addressed to the *Dean of the Medical Faculty of T. U.*, and come to hand before the first of June next, when the appointment will be made. The name of no one but the successful candidate will be made public.

Jefferson Medical College of Philadelphia.—At the annual commencement, held on the 6th of March, the degree of doctor of medicine was conferred on *fifty-six* graduates. The honorary degree was granted to *one*. The names will be given in our next.

Pennsylvania College, Medical Department.—At the annual commencement of this institution, held on the 2d of March, the degree of doctor of medicine was conferred on *thirty-nine* gentlemen. Besides these, *three* received the honorary degree of doctor of medicine.

Spring Course of Lectures at the College of Physicians and Surgeons, New York.—An association has been formed, for the purpose of offering to the students of medicine in New York a course of instruction, which, it is hoped, may profitably occupy a portion of their time during the ensuing spring and summer.

Lectures will be delivered at the College of Physicians and Surgeons, in Crosby street, on the following subjects:—

On the pathology of the chest, auscultation, and percussion, by John A. Swett, M. D., lecturer on diseases of the chest. This course will be fully illustrated by clinical cases.

On club feet and analogous deformities, by — Detmold, M. D.

On the diseases of the kidneys, by Wm. C. Roberts, M. D.

On the diseases of the eye, by G. Wilkes, M. D., surgeon of the New York eye infirmary. Clinical instruction at the infirmary.

On the pathology of the uterus and its annexes, by C. R. Gilman, M. D., lecturer on obstetrics and the diseases of women and children in the College of Physicians and Surgeons.

On operative surgery, by W. Parker, M. D., professor of surgery, College of Physicians and Surgeons.

On the anatomy of the nervous system, by James Quackenboss, demonstrator of anatomy.

On surgical anatomy, by R. Watts, Jr., M. D., professor of anatomy, College of Physicians and Surgeons.

The lectures will commence on the first Monday in April, and continue about three months. Two lectures will be delivered daily. Hours, from one to three o'clock.

The fee for the whole course is ten dollars—a movement downwards in the rate of fees which does not meet our approbation.

*Dissection of a Club-Foot.*¹—Sir, I enclose you an account of the dissection of a case of club-foot, in which the sole was turned inwards and upwards, the patient treading on the upper surface of the os cuboides, which had become rough and irregular, giving rise to an extensive ulceration on the instep, for which the limb was amputated; but the case did not do well, owing to the formation of abscesses in the thigh, and a subsequent attack of hemiplegia. I am, sir, your obedient servant,

PHILIP B. AYRES, M. D., M. R. C. S.

Thame, November 27, 1840.

Tendo achillis very much shortened, preventing flexion of the ankle-joint.

Tendon of the tibialis anticus very short, preventing eversion of the foot.

Tendon of the extensor longus pollicis rather shortened, but nearly natural.

Tendons of the extensor longus digitorum natural.

Tendon of the peroneus tertius elongated and expanded.

Extensor brevis digitorum flabby and very thin, but otherwise natural.

Tendon of the flexor longus pollicis rather shortened.

Tendons of the flexor longus digitorum somewhat shortened, but very slightly so.

Tendon of the tibialis posticus slightly shortened.

Tendons of the peronei natural.

Short muscles of the foot natural.

The bones of the foot, although the patient was 27 years of age, and the disease congenital, were apparently in a natural state, and would certainly, judging from their appearance, have allowed the foot to have regained its natural position had the opposing tendons been divided. The principal opposing tendons were those of the gastrocnemii and soleus, and the tibialis anticus, so that by dividing these tendons, the remainder, which were nearly in their natural state, would have permitted the foot to have righted itself. I am not aware that there is any novelty in this case; but as in new operations every fact possesses some value, I have sent this dissection for publication.

¹ London Medical Gazette, Dec. 11, 1840, p. 448.